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PTO/SB/05 (08-03)

Approved for use through 07/31/2006. OMB 0651-0032

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UTILITY
PATENT APPLICATION
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. CL1375USCNT

First Inventor Edmund Arthur Flexman Et. Al.

Title TOUGHENED, HIGH-MODULUS POLYAMIDES
AMENDED TITLE: TOUGHENED HIGH MODULUS MINERAL
FILLED POLYOXYMETHYLENE POLYMERS

Express Mail Label No. EV 417442975 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 21]
(preferred arrangement set forth below)
- Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☐ Drawing(s) (35 U.S.C. 113) [Total Sheets _____]
5. Oath or Declaration [Total Sheets _____]
- a. ☐ Newly executed (original or copy)
- b. ☒ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
- i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or
Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies); or
- ii. ☐ Paper
- c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement of Power of Attorney
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement (IDS)/PTO-1449
Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122
(b)(2)(B)(i). Applicant must attach form PTO/SB/35
or its equivalent.
17. ☐ Other: _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 09/889,875, 07/20/2001

Prior application information:

Examiner K. Wyrozowski Lee

Art Unit: 1714

For CONTINUATION OF DIVISIONAL APPS only; The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number: 23906 OR ☐ Correspondence address below

Name

Address

City

State

Zip Code

Country

Telephone

Fax

Name (Print/Type)

William H. Hamby

Registration No. (Attorney/Agent)

31,521

Signature

Date

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**FEE TRANSMITTAL
for FY 2004**

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) **1,370.00****Complete if Known**

| | |
|----------------------|-------------------------------|
| Application Number | Unknown |
| Filing Date | Unknown |
| First Named Inventor | Edmund Arthur Flexman Et. Al. |
| Examiner Name | Unknown |
| Art Unit | Unknown |
| Attorney Docket No. | CL 1375 US CONT. |

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit
Account
Number
Deposit
Account
Name**04-1928****E. I. du Pont de Nemours and Company**

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

| Large Entity Fee Code (\$) | Small Entity Fee Code (\$) | Fee Description | Fee Paid |
|-------------------------------|-------------------------------|------------------------|----------|
| 1001 770 | 2001 385 | Utility filing fee | 770.00 |
| 1002 340 | 2002 170 | Design filing fee | |
| 1003 530 | 2003 265 | Plant filing fee | |
| 1004 770 | 2004 385 | Reissue filing fee | |
| 1005 160 | 2005 80 | Provisional filing fee | |

SUBTOTAL (1) (\$) **770.00****2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

| Total Claims | Extra Claims | Fee from below | Fee Paid |
|--------------------|--------------|----------------|----------|
| | -20** = | 18 | |
| Independent Claims | -3** = | 86 | |
| Multiple Dependent | YES | 290.00 | |

| Large Entity Fee Code (\$) | Small Entity Fee Code (\$) | Fee Description | Fee Paid |
|-------------------------------|-------------------------------|--|----------|
| 1202 18 | 2202 9 | Claims in excess of 20 | |
| 1201 86 | 2201 43 | Independent claims in excess of 3 | |
| 1203 290 | 2203 145 | Multiple dependent claim, if not paid | |
| 1204 86 | 2204 43 | ** Reissue independent claims over original patent | |
| 1205 18 | 2205 9 | ** Reissue claims in excess of 20 and over original patent | |

SUBTOTAL (2) (\$) **0.00**

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity Small Entity

| Fee Code (\$) | Fee Code (\$) | Fee Description | Fee Paid |
|---------------|---------------|--|----------|
| 1051 130 | 2051 65 | Surcharge - late filing fee or oath | |
| 1052 50 | 2052 25 | Surcharge - late provisional filing fee or cover sheet | |
| 1053 130 | 1053 130 | Non-English specification | |
| 1812 2,520 | 1812 2,520 | For filing a request for <i>ex parte</i> reexamination | |
| 1804 920* | 1804 920* | Requesting publication of SIR prior to Examiner action | |
| 1805 1,840* | 1805 1,840* | Requesting publication of SIR after Examiner action | |
| 1251 110 | 2251 55 | Extension for reply within first month | |
| 1252 420 | 2252 210 | Extension for reply within second month | |
| 1253 950 | 2253 475 | Extension for reply within third month | 530.00 |
| 1254 1,480 | 2254 740 | Extension for reply within fourth month | |
| 1255 2,010 | 2255 1,005 | Extension for reply within fifth month | |
| 1401 330 | 2401 165 | Notice of Appeal | |
| 1402 330 | 2402 165 | Filing a brief in support of an appeal | |
| 1403 290 | 2403 145 | Request for oral hearing | |
| 1451 1,510 | 1451 1,510 | Petition to institute a public use proceeding | |
| 1452 110 | 2452 55 | Petition to revive - unavoidable | |
| 1453 1,330 | 2453 665 | Petition to revive - unintentional | |
| 1501 1,330 | 2501 665 | Utility issue fee (or reissue) | |
| 1502 480 | 2502 240 | Design issue fee | |
| 1503 640 | 2503 320 | Plant issue fee | |
| 1460 130 | 1460 130 | Petitions to the Commissioner | |
| 1807 50 | 1807 50 | Processing fee under 37 CFR 1.17(q) | |
| 1806 180 | 1806 180 | Submission of Information Disclosure Stmt | |
| 8021 40 | 8021 40 | Recording each patent assignment per property (times number of properties) | |
| 1809 770 | 2809 385 | Filing a submission after final rejection (37 CFR 1.129(a)) | |
| 1810 770 | 2810 385 | For each additional invention to be examined (37 CFR 1.129(b)) | |
| 1801 770 | 2801 385 | Request for Continued Examination (RCE) | |
| 1802 900 | 1802 900 | Request for expedited examination | |

* 2 mth ext. previously paid

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) **0.00****SUBMITTED BY**

(Complete if applicable)

| | | | | | |
|-------------------|-------------------------|-----------------------------------|------------|-----------|----------------|
| Name (Print/Type) | William H. Hamby | Registration No. (Attorney/Agent) | 31,521 | Telephone | (302) 992-3230 |
| Signature | <i>William H. Hamby</i> | Date | 10/15/2004 | | |

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

| | |
|--|-------------------------|
| EDMUND ARTHUR FLEXMAN ET. AL. | CASE NO.: CL1375USCNT |
| APPLICATION NO.: UNKNOWN | GROUP ART UNIT: UNKNOWN |
| FILED: CONCURRENTLY HEREWITH | EXAMINER: UNKNOWN |
| FOR: TOUGHENED, HIGH-MODULUS POLYAMIDES | |
| AMENDED TITLE: TOUGHENED HIGH MODULUS MINERAL FILLED | |
| POLYOXYMETHYLENE POLYMERS | |

PRELIMINARY COMMUNICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to examination of this application kindly consider the following remarks:

In related Application No 09/889,875 the Examiner issued an Advisory Action mailed February 19, 2004. Applicant would like to make the following observations regarding the points raised in the Advisory Action, and in the interest of further illustrating the patentability of the instant claims.

The Examiner has written that:

"The property studied by the prior art of ASHIM is izod impact of the composition and its tensile strength. In fact applicants own Examples (1&2, table 2) report having Izod Impact that lies squarely in the middle of those disclosed in saturated acids of ASHIMA. Therefor ASHIMA disloses the composition, even if in comparative examples. Present invention teaches izod impact of 1.3 while ASHIMA teaches 1.4, 1.8 and 1.6 in the reference examples 4-1 through 4-3 depicted by the applicants"

The Examiner compares Izod impact values of 1.4 in the present invention with values of 1.4, 1.8, and 1.6 in Aishima. However Applicant's Izod impact values are reported in units of **ft-lb/in**, while Aishima reports values in units of **kg-cm/cm**. The respective units are clearly indicated in the respective tables of the respective documents. It is apparent that such values are not directly comparable, as 1 ft-lb/in is about 0.184 kg-cm/cm. Thus, 1.8 kg-cm/cm is about 0.33 ft-lb/in and 1.4 kg-cm/com is about 0.26 ft-lb/in. 1.3 ft-lb/in is therefore

significantly larger than the Izod impact strengths disclosed by Aishima in reference examples 4-1 through 4-3.

Furthermore, the reference examples 4-1 through 4-3 of Aishima are **polyethylene** compositions containing **calcium carbonate** (see col. 8, line 62 - col. 9 line 2; col. 6, line 63 - col. 7, line 23 (and in particular line 10); and Table 1) while examples 1 and 2 in Table 2 of the present invention are **nylon 6** containing **titanium dioxide**. The examiner has stated that "ASHIMA discloses the composition, even if in comparative examples" when, in fact, Aishima has not done this. Applicant contends that there is no reason for one to expect polyethylene and nylon compositions to have comparable Izod impact strengths, and respectfully submits that comparisons between them are not appropriate.

The benefit of Applicant's invention is the improvement in stiffness and impact resistance provided by the addition of the claimed mineral fillers to nylon 6, nylon 66, or a mixture thereof in the presence of a saturated organic acid (or salt thereof) over compositions that do not contain the saturated organic acid. This improvement is amply shown in the examples. Aishima, on the other hand, discloses that certain improved mechanical properties can be obtained from compositions comprising a thermoplastic and an inorganic filler "having been prepared by effecting reaction between an inorganic material [...] and [...] at least one unsaturated aliphatic or aromatic carboxylic acid having from 3 to 11 carbon atoms" (abstract). Reference examples 4-1 and 4-2 of Aishima show that the use of saturated organic acids do not provide the same benefit.

The examiner has also written that:

"In addition to the above the prior art of Metzemacher teaches the equivalents of the unsaturated and saturated fatty acids in col. 2, lines 32-45), which would render even more obvious to utilized saturated fatty acid of Metzemacher in the composition of ASHIMA."

Metzemacher discloses "a surface-modified filler composition [...] for flameproofing polymers" (col. 1, lines 6-7). Metzemacher does not teach that the filler composition improves the mechanical properties of polymers. It is respectfully submitted that one would have had no motivation to use the fatty acids disclosed in Metzemacher in the compositions of Aishima to provide a composition with improved mechanical properties, particularly since Aishima explicitly teaches that saturated acids do not work.

Favorable consideration of the instant claims in view of the above remarks is respectfully solicited.

Respectfully submitted,



WILLIAM H. HAMBY
ATTORNEY FOR APPLICANTS
Registration No.: 31,521
Telephone: (302) 992-3230
Facsimile: (302) 992-3257

Dated: February 25, 2004